

# GENE NEWS

*A Publication of the Hawai'i Department of Health Genetics Program*

## DNA Day...What's It All About?

**B**atman & Robin, Sonny & Cher, Bert & Ernie. In the world of genetics, the names *Watson & Crick* fit together as naturally as any of these famous pairs. While it's true that Watson & Crick are not caped crusaders fighting crime, famous singers from the 1960's, or beloved childhood characters, the accomplishments of this dynamic duo will have the world celebrating on April 25, 2003!

### *Why do Watson & Crick give us reason to celebrate?*

Fifty years ago, on April 25, 1953, James Watson and Francis Crick announced that they had discovered the double helix structure of DNA.

**So what?** DNA is the most basic unit of heredity, and it encodes the information necessary to create life. As many say, "DNA is Life; Life is DNA!!" According to Paul Berg in a New York Times article, "The Watson-Crick discovery changed the whole paradigm. Until then nobody even knew what a gene was...it was overpowering. It changed our whole way of thinking. Just by looking at it, you could see the way DNA worked — by the way all those A's and T's and C's and G's lining up so nicely, you could see that there had to be a code."



By determining the simple, twisted ladder structure of DNA, Watson & Crick initiated an explosion of other gene-related advances and discoveries, including the recent *Human Genome Project*. In association with the fiftieth anniversary of the discovery of DNA's structure, the leaders of the Human Genome Project are expected to announce the project's completion in April 2003.

So, on April 25<sup>th</sup>, take a short break from your busy schedule, think about the amazing discovery of Watson & Crick, how we are all made of DNA, and join us in.....

### **Celebrating DNA Day!**

***Want more information about DNA Day?  
Check out these websites!***

[www.hawaiiigenetics.org](http://www.hawaiiigenetics.org)

[www.genome.gov](http://www.genome.gov)

[www.time.com/time/covers/1101030217](http://www.time.com/time/covers/1101030217)

[www.newyorktimes.com/indexes/2003/02/03/health/genetics/index.html](http://www.newyorktimes.com/indexes/2003/02/03/health/genetics/index.html)

### **Reminder: U.H. DNA DAY**

**When?** Wednesday, April 23, 2003  
10:30 am-2:30 pm

**Where?** U.H. Manoa  
Campus Center Courtyard  
& Star 101.9.

**With:** There will be: \*Games \*Prizes  
\*Career Info \*Free Giveaways \*Music

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**Hawai'i Department  
of Health**



*Hawai'i Genetics Program*

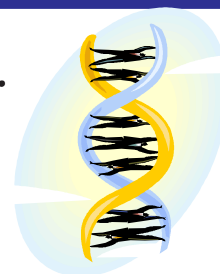
Children with  
Special Health Needs  
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# Genetics and Public Health Seminar Series

*Celebrating 50 Years of  
Discovery*

*Babies Screened for 30 genetics disorders at birth.....  
Gene linked to obesity.....  
Intelligence determined at birth.....*



A series of two hour seminars will explore the scientific, ethical, legal, and social issues that are raised by the advances in genetic technology in the context of public health and policy.

All seminars at: **Biomedical Sciences Building T208, University of Hawaii at Manoa**

■ **Seminar 1 – April 1, 6:00 p.m. – 8:00 p.m.**  
**Genetics and Public Health: Putting the Pieces Together**

An introductory overview of the past, present and future impact of genetics on public health and policy.

■ **Seminar 2 – April 8, 6:00 p.m. – 8:00 p.m.**  
**Genetic Screening: From Newborns to Convicts**

Genetic screening is taking place in many different scenarios. What is happening and what issues arise in each setting?

■ **Seminar 3 – April 22, 6:00 p.m. – 8:00 p.m.**  
**Genetic Discrimination**

The possibility of discrimination based on genetic information exists for many of a person's major concerns: health insurance, employment, desirability. Is it ever okay to discriminate based on genetic information?

■ **Seminar 4– April 29, 6:00 p.m. – 8:00 p.m.**  
**Genetics and the Government**

How should Federal and State governments respond to genetic advances? How should Health Departments and public health training programs react?

Sponsored by:  
Hawaii Department of Health Genetics Program  
University of Hawaii Department of Public Health Sciences and Epidemiology

For more information,  
please go to  
[www.hawaiigenetics.org](http://www.hawaiigenetics.org)

## GENETICS FOR YOUR PRACTICE SPRING CONFERENCE 2003

**Monday, April 14<sup>th</sup>, 2003**    **Nurses & Allied Health Professionals**

**Tuesday, April 15<sup>th</sup>, 2003**    **Physicians**

Hawaii Prince Hotel  
Waikiki

Have you heard about the **Genetics for Your Practice Spring Conference**? If so, we hope you have registered, and we look forward to seeing you at the conference. If not, it's not too late! We will accept registrations up to **April 8<sup>th</sup>, 2003**.

**Questions?** Please contact Allison @ (808)733-4998, or via email: [allison@hawaiigenetics.org](mailto:allison@hawaiigenetics.org).

# Applications of the Human Genome Project

**The** U.S. Human Genome Project (HGP) began in October 1990 with the goal of discovering all of the 30,000 to 40,000 human genes. The project was expected to last 15 years, but advances in technology have accelerated the progress of the HGP, and it is expected to be completed two years ahead of schedule in April 2003. The lives of millions of people have already been profoundly altered by technology based on HGP. DNA-based technology has become part of the treatment and diagnosis of disease, the food we eat, and the search for criminals. These discoveries have ushered in the “genome era,” and there are many exciting potential applications of the information uncovered by the HGP.

## *Risk Assessment, Diagnosis & Pharmacogenetics*

**Medical** DNA testing for genetic risk assessment is well established. Genetic tests are now available for some 930 diseases, according to Dr. Roberta Pagon, a professor of pediatrics at the University of Washington who oversees a database of such tests ([www.genetests.org](http://www.genetests.org)). In the future, DNA-based technology may also assess individual risk to toxic exposures, or even the effectiveness of certain medications.

## *Molecular Medicine*

**Increasingly**, detailed genome maps have aided researchers seeking genes for common disorders, including breast cancer and Alzheimer’s disease. Many believe that the medical field of the future will be characterized less by symptomatic treatment of diseases, and more by looking to the genetic causes of disease. Certain types of medication, such as insulin and growth hormone, are already being genetically engineered. Other medications, such as Gleevec®, a treatment for chronic myelogenous leukemia, and Cerezyme®, a highly effective drug used in the treatment of Gaucher disease, are synthesized based on an understanding of genetic information.

## *DNA Forensics*

**DNA** as a means of identifying individuals has developed into a hallmark forensic technique which is strong enough to overturn verdicts based on eyewitness testimony. When applied to stored biological evidence, forensic DNA techniques have proven the innocence of many falsely convicted inmates.

**Y**et for all its scope, DNA application is still in its infancy. In ten years, scientists think that people may be able to order complete lists of their genetic makeup, or use gene therapy to cure conditions like Alzheimer’s disease. Whatever may come, it will definitely be exciting and have impacts on each of our lives!

For more information about the  
Applications of the Human Genome  
Project, see  
[www.ornl.gov/TechResources/  
Human\\_Genome](http://www.ornl.gov/TechResources/Human_Genome)

# Have You HEARD About Our Congenital Hearing Loss Research Project?



**WHO?** Infants born with permanent hearing loss (detected on newborn hearing screening), or diagnosed with permanent hearing loss before their third birthday will be eligible to participate.

**WHERE?** Hawaii and three other states (Utah, Rhode Island & Georgia) will be carrying out this project.



**WHY?** This study is being done to try to better define and understand the causes, including genetic causes, of congenital (early-onset) hearing loss. Not only will this study allow for some families in the study to learn the cause of their child's hearing loss, but it will also help to better understand the overall causes, and to design the best protocol for genetics follow-up for children with hearing loss.



**WHAT?** “An Investigation of the Causes of Hearing Loss in Infants and Young Children” is a research project to study the causes of congenital (early-onset) hearing loss. The study will involve a full genetics evaluation, visits with a genetic counselor and geneticist, and testing for the genes believed to account for most early hearing loss.

**WHEN?** We anticipate that the study will be underway in Hawaii within the next two to three months.



***Please feel free to contact the Genetic Counselors for the Project:***

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